EXPLANATION OF SIGNIFICANT DIFFERENCES

for the

ARCTIC SURPLUS SUPERFUND SITE
Fairbanks, Alaska

From the
Record of Decision (ROD), September 1995

I. INTRODUCTION

A. Site Name and Location

Arctic Surplus Salvage Yard Site
Fairbanks North Star Borough, Alaska

B. Lead and Support Agencies

The lead agency for Arctic Surplus Salvage Yard Site (Arctic Surplus or Site) cleanup activities is the U.S. Environmental Protection Agency (EPA). The Alaska Department of Environmental Conservation (ADEC) is supporting EPA at this Site.

C. Explanation of Significant Differences

This document addresses a significant change to the selected remedy for soil contaminated with lead and polychlorinated biphenyls (PCBs) as defined in the Record of Decision (ROD), signed by the U.S. Environmental Protection Agency (EPA), Region 10, on September 28, 1995. This document provides an Explanation of Significant Differences (ESD) as required under Section 117(c) of CERCLA, and the National Contingency Plan (NCP), 40 C.F.R. Section 300.435(c)(2)(1).

D. Circumstances Leading to ROD Changes

Since the ROD was signed in 1995, additional Site characterization and design data support the need to modify the ROD remedy. Specifically:

- Recent site characterization studies indicate that: (1) the lead and PCB contamination in soil is largely commingled; (2) the volume of lead and PCB-contaminated soil is less than originally estimated in the 1995 ROD; and (3) the volume of soil containing PCB concentrations greater than 50 mg/kg (i.e., defined as "hot-spots" in the 1995 ROD) is significantly less than originally estimated in that ROD.

- Recent engineering studies comparing the long-term performance of the ROD remedy cap and an alternative cover system suggest that the alternative cover consisting of a geosynthetic clay liner (GCL) is more resistant than the 2-foot thick compacted silt layer to cracks caused by freeze-thaw cycles and more cost-effective. In addition, policies regarding future use of Superfund sites have changed to encourage future reuse where compatible with the remedy. This policy change has resulted in cap design changes that both encourage certain future land uses, such as parking lots, storage yards, parks, and reduce long-term maintenance costs.

Summarized below are the post-ROD information that form the basis for the proposed changes to the 1995 ROD remedy.

E. Administrative Record

This ESD will become part of the Administrative Record for the Arctic Surplus Superfund Site, which is available to the public at the following location:

U.S. Environmental Protection Agency
Record Center, 7th Floor
1200 Sixth Avenue
Seattle, Washington 98101

EPA has also created a local information repository containing the Administrative Record at the Defense Reutilization Material Office (DRMO) across the street from the site on Badger Road. This information repository contains the recent data discussed in this ESD and is available to the public.

F. Site Background

The Arctic Surplus Salvage Yard Superfund Site (Site) is located in Fairbanks North Star Borough, Alaska. It is a privately owned salvage yard located approximately five miles southeast of the City of Fairbanks. The Site, which consists of several land parcels, occupies approximately 24.5 acres and is bounded on the south by the Alaska Railroad and the Old Richardson Highway, on the west by Badger Road, on the north by private residences, and on the east by a sand and gravel company. Figure 1 shows the location of the Site.

The western portion of the Site was owned and operated as a municipal landfill by the Department of Defense from 1944 to 1956. At closure, the landfill was capped with ash that was produced from a coal-fired power plant at Ladd Field (now Fort Wainwright). Following its sale by the Department of Defense to a private party in 1957, the Site has been privately owned and operated as a military surplus goods storage, salvage, recycling, and disposal facility. Battery processing and transformer scrapping activities at the Site contributed significantly to Site contamination. Specific activities that have impacted the Site include:

- Processing of lead-acid batteries to reclaim the lead;

- Draining oil from of transformers, some of which contained PCBs;

- Leaking fluids from salvaged mechanized equipment;

- Apparent use of transformer oils to fuel an incinerator, which in turn was used to burn or melt copper coils from transformers and lead from batteries;

- Accumulation of spent ordnance and explosives scrap, which may or may not have been properly demilitarized;

- Improper storage of oils, chemicals, containerized gases, and other hazardous materials, including bulk asbestos and asbestos-clad vessels; and,

- Frequent Site traffic and movement of materials contributed to the distribution of contaminants across wide areas of the site.

In 1986, two representatives from the Department of the Army conducted a Site walk-through in response to a complaint about stored waste material with military markings. ADEC conducted a Preliminary Assessment in 1987 and a Site Inspection in 1989 in accordance with CERCLA statutes and NCP regulations. The Site was proposed for inclusion on the National Priorities List (NPL) on October 26, 1989, and listed on August 30, 1990.

EPA carried out removal actions in 1989, and the U.S. Department of Defense, Defense Logistics Agency (DLA), conducted removal actions in 1990, 1991, and 1992 under a Removal Order with EPA. During 1989, the Site was fenced, approximately 22,000 pounds of asbestos were removed, and approximately 75 gallons of chlordane were transported to off-Site treatment and disposal facilities. During 1990, 1991, and 1992, more extensive removal actions included:

- Dismantling and securing storage of an incinerator and associated ash and soil;

- Removal of 1,700 drums of liquid waste;
- Removal and disposal of approximately 13 cubic yards of PCB-contaminated soil;
- Removal and disposal of approximately 315 cubic yards of lead-contaminated soil from four of five "battery-cracking" areas; and,
- Removal and disposal of approximately 160 cubic yards of chlordane-contaminated soil from two areas.

These actions also included the removal of containerized waste, and intact or broken battery casings, the draining and disposal of transformer oils, and the capping of specific areas of contaminated soil. These actions were taken to control Site access, remove potential source material, and stabilize Site conditions until the Site could be more fully characterized and evaluated by a Remedial Investigation and Feasibility Study (RI/FS).

EPA sent notice letters to Potentially Responsible Parties (PRPs) on February 7, 1992, explaining their potential liability under CERCLA, requesting additional information, and seeking their input to the Superfund response actions at the Site. On July 24, 1992, EPA and DLA entered into an Administrative Order on Consent (AOC) in which DLA agreed to implement the RI/FS. On November 4, 1992, EPA entered into an AOC with the Alaska Department of Transportation (ADOT) to clean up their Badger Road right-of-way adjacent to the Site as part of the Badger Road improvement project. The other PRPs (land owners) chose not to participate in these actions. Both the RI/FS and the ADOT cleanup projects were completed by 1994. Having completed the RI/FS, EPA documented the selected remedy for the Site in the September 28, 1995, ROD.

As part of the design of the proposed remedy, additional site characterization and engineering studies were conducted in September and October 2002. The Department of Defense (DOD) also screened the site for accumulation of spent ordnance and explosives scrap, which may or may not have been properly demilitarized (rendered unusable). Several potentially explosive devices were found and removed for proper disposal.

Results from these post-ROD studies are leading to changes to the 1995ROD remedy as discussed in more detail below.

G. Site Contamination

Based on the Remedial Investigation(RI) work performed in 1992 and 1993, several potential source areas remained after the removal actions, including:

- "Battery cracking" areas,

- Buried materials, including the old military landfill,

- Wide-spread lead and PCB soil contamination,

- Drum storage areas,

- Incinerator areas,

- Transformer processing areas, and

- Salvage and debris piles.

The pre-ROD Site studies resulted in the identification of a wide range of contaminants at the Site; including inorganic compounds, semivolatile and volatile organic compounds, PCBs, pesticides, dioxins, and furans. Of these contaminants, most have been detected only locally or in low concentrations at the Site. According to the human health and environmental risk assessments completed for the ROD, lead- and PCB-contaminated soil are the primary concerns because of their higher concentrations and dispersion throughout the Site. Trichloroethylene (TCE) was found in the groundwater in one on-site well above the maximum contaminant limit (MCL). TCE has not been found in any of the off-Site monitoring wells.

<u>Lead</u> - Lead was identified in on-Site surface soil especially in areas where battery processing is known to have occurred, or debris from battery processing was deposited. Highly contaminated soil was excavated and transported off Site during removal actions. Lead has since been identified at concentrations above 400 mg/kg in surface soil over much of the western portion of the Site. It has also been found at elevated levels in a limited number of samples of off-Site soil, presumably transported by traffic, filling and grading, or particulate transport from wind and burning.

<u>Polychlorinated Biphenyls (PCBs)</u> – PCB-containing oils were found in old transformers, drums and oil-stained soil in several areas of the Site. Free product was removed and heavily contaminated soil was excavated and removed from the Site. Analyses of surface soil throughout much of the western part of the Site has detected elevated levels of PCB in isolated locations in excess of 50 mg/kg. Historically, PCBs have also been detected in off-Site surface soil to the west of the Site. Presumably, contaminants were transported by traffic or filling and grading activities, which involved impacted soil. PCB-impacted off-Site soil located immediately west of the property boundary was addressed by removal actions conducted by DOT that took place during the Badger Road expansion.

Trichloroethylene (TCE) - TCE was found above the drinking water MCL in one well in the northwest corner of the Site. None of the other wells sampled on-Site or off-Site has had TCE concentrations above detection limits which are below the MCL value for TCE.

Therefore, as summarized in the 1995 ROD, the health and environmental risks posed by Site soil contamination are: (1) direct contact with contaminants in surface soil, primarily lead and PCBs; and (2) leaching and contamination of groundwater which serves as a principal source of drinking water for the region.

II. REMEDY SELECTED IN THE RECORD OF DECISION (ROD)

The overall objective of the remedial actions for the Arctic Surplus Site is to protect currently- and potentially-exposed humans by limiting direct contact with contaminants in Site soil and contaminated groundwater while allowing future access to areas containing salvageable and recyclable material. Specific remedial action objectives (RAOs) stated in the 1995 ROD for Site soil are:

- Prevent exposure by ingestion, inhalation, and dermal contact with contaminated soil and dust that would result in: excess lifetime carcinogenic risk above 1x10-5; noncarcinogenic HI above 1.0; or other health effects posed by exposure to lead in soil.

- Prevent migration of contaminants via soil erosion/surface water runoff, wind erosion, and infiltration/leaching of soil contaminants to groundwater.

The 1995 ROD established numerical cleanup goals for PCBs and lead in soil to meet the RAOs:

PCBs – 1 mg/kg outside the fenced area; 10 mg/kg inside the fenced area. These cleanup goals were based on PCB spill cleanup guidelines EPA promulgated under the Toxic Substances Control Act (TSCA) for unrestricted (i.e., residential) and restricted (fenced industrial) areas.

Lead – 400 mg/kg outside the fenced area; 1,000 mg/kg inside the fenced area. The residential cleanup goal was based on EPA Interim Soil Lead Guidance for CERCLA Sites, which used the IEUBK Model to estimate soil concentrations that will not result in an unacceptable blood lead level in children. Since there were no suitable models for adult lead exposure, the industrial cleanup goal was based on a comparative analysis of soil cleanup costs for different soil cleanup levels. This evaluation indicated that a soil cleanup goal set at 1,000 or 2,000 mg/kg would not change the soil cleanup costs significantly. A soil cleanup goal set below 1,000 mg/kg, however, would greatly increase soil cleanup costs. After reviewing industrial cleanup levels for lead at other sites, EPA selected 1,000 mg/kg lead as the industrial soil cleanup goal. In addition, it was determined that lead concentrations of 1,000 mg/kg or less typically do not result in TCLP lead concentrations that would exceed the regulatory threshold of 5 mg/L.

Chlorinated Dioxins and Furans — soil concentrations corresponding to an excess cancer risk of 1×10^{-5} (or 0.44 µg/kg).

None of the other Site contaminants (e.g., chlorinated pesticides) found in the soil presented a risk great enough to change the overall Site risk when added to the risks from PCBs and lead.

The selected remedy in the 1995 ROD consists of the following key components:

- Relocation and processing, including decontamination, of salvage material and debris that must be moved to provide access to contaminated Site soil;

- Excavation of contaminated soil and stockpiling for treatment and disposal. Soil outside of the current fenced area with contaminant concentrations above 400 mg/kg lead or 1 mg/kg PCBs; and soil inside the fenced area with concentrations above 1,000 mg/kg lead, 10 mg/kg PCBs, or chlorinated dioxin/furans above risk-based levels of concern will be excavated;

- Treatment of contaminated soil exceeding 50 mg/kg PCBs by solvent extraction, and solidification/stabilization of soil exceeding 1,000 mg/kg lead. Soil contaminated with pesticides and dioxin/furans will be transported to an approved off-Site permitted treatment and disposal facility;

- Consolidation of the soil in the containment area and the existing landfill with a TSCA chemical waste landfill cap; and

- Institutional controls including long-term groundwater monitoring, operation and maintenance of the fences and cap; and restrictions to prevent use of groundwater, to maintain a current industrial use, and to prevent unauthorized access or use of the capped area.

The 1995 ROD remedy includes both on-Site treatment and containment elements for PCBs and lead, and off-Site treatment and disposal elements for chlorinated dioxins, furans and pesticides. The on-Site treatment and disposal elements for lead and PCBs are further described below.

III. CHANGES IN THE SELECTED REMEDY REQUIREMENTS IN THE ROD

A. Changes in the Management of PCB-Contaminated Soil

Table 1
Summary of Changes

Parameter (PCB soil)	1995 ROD Requirements	ESD Changes
Off-Site soil > 1 mg/kg	Consolidated in TSCA landfill on-Site	No change
On-Site soil < 10 mg/kg	No action required	No change
On-Site soil between 10 - 50 mg/kg	No treatment - consolidate in TSCA landfill on-Site	Treat-solidify/stabilize consolidate in TSCA landfill on-Site
On-Site soil > 50 mg/kg	Treat by solvent extraction. Treated soil consolidated on-Site	Remove to off-Site disposal facility

The changes in this ESD modify the remedy for soil containing PCBs above the Site cleanup goals. Soil with PCB concentrations greater than the cleanup levels but less than 50 mg/kg will be solidified and stabilized along with the lead contaminated soil and placed underneath the cap. The relatively small volume of soil containing greater than 50 mg/kg PCBs will be managed off-Site at a commercial facility acceptable under EPA's Off Site Rule (40 CFR 300.440) along with the dioxin/furan- and chlorinated pesticide-contaminated soil already required to be transported off-Site by the 1995 ROD. Solidifying and stabilizing soil containing less than 50 mg/kg PCBs will result in further reducing the long-term threat from the soil (with solidified/stabilized PCB contamination) that remains underneath the cap. Off-Site disposal of the relatively small volume of soil containing greater than 50 mg/kg PCBs would have the same or greater level of protectiveness when compared to the original remedy, because, both the original remedy and the modified remedy would result in no soil with greater than 50 mg/kg PCB left on the Site.

This ESD does not change the management of the lead contaminated soil that was contained in the 1995 ROD remedy.

B. Changes in the Cap Design

Table 2
Summary of Cap Changes

Parameter	1995 ROD Requirements	ESD Changes
Low permeability cap	Compacted silt	GCL
Final shape of cap	Mound with steep sides	Flattened top to allow for reuse of land
Fencing	Protective fence around containment area	No change
Institutional Controls	Not specific	No digging, maintenance of cap
Groundwater monitoring	Specific monitoring wells	No change

This ESD modifies the cover system described in the ROD. Rather than a low-permeability soil liner, a geosynthetic clay liner (GCL) will be installed, rather than steep slopes that discourage future surface uses of the covered area, more moderate slopes will be created to minimize erosion of the vegetative layer.

C. Institutional Controls

Specific institutional controls (ICs) are being developed for this Site as required by the ROD. Currently, access to the Site is limited for remedial action purposes. The long-term operation and maintenance of the permanent hazardous waste containment area will necessitate arrangements for permanent access. The Site will also have permanent groundwater monitoring wells that will be sampled periodically and must be maintained. The ROD is specific that the remediated Site will be cleaned up site be used for industrial purposes only. Therefore, no residential use will be considered without further evaluation and cleanup if necessary. DLA and ADEC are evaluating options for permanent ICs to be attached to the property and transfer with the land should it be sold to new owners.

Basis for the Changes

Since the ROD was signed in 1995, additional Site characterization and design data support the need to modify the ROD remedy. The 1995 ROD did not discuss impacts to the design after of removal of the highly contaminated PCB soil from the Site. Specifically,

- Recent Site characterization studies indicate that: (1) the lead- and PCB-contamination in soil is largely commingled and this change would allow the contaminated soil to be treated in a similar manner; (2) the volume of lead- and PCB-contaminated soil is less than originally estimated in the 1995 ROD, because of better estimates based on recent sampling data; and (3) the volume of soil containing PCB concentrations greater than 50 mg/kg (i.e., "hot-spots" as defined in the ROD) is relatively insignificant compared to the total volume of contaminated soil and is much less than originally estimated in the 1995 ROD. Consequently, the on-Site solvent extraction treatment becomes less cost effective in treating this soil then off-Site disposal.

- Recent engineering studies comparing long-term performance of GCL and low-permeability silt liner systems suggest that the GCL (the 1995 ROD alternative cover system) is more resistant than the 2-foot thick compacted silt layer to cracks caused by freeze-thaw cycles and more cost-effective.

Summarized below are the post-ROD study data that form the basis for the changes to the 1995 ROD remedy.

Post-ROD Site Characterization

Surface soil samples were collected in September 2002 from 115 locations chosen based on a 100-foot by 100-foot grid system and analyzed for lead and PCBs. In October 2002, surface soil samples were collected from 20 additional locations near the former Pederson residence. Four more soil samples were collected from the southwestern portion of the Site and inside and around the three transformer buildings. In addition to these surface soil samples, two sample locations were vertically profiled to understand the distribution of contaminants. The results from the vertical profiling suggest that most of the contamination is limited to the 0 to 6-inch depth as described in the RI and the 1995 ROD. The 2002 data are presented in the Remediation Work Plan Technical Basis, prepared by DLA as part of the Remedial Design for the selected remedy in the 1995 ROD.

Figure 2 shows the results of all analysis based on historical site data and the 2002 post-ROD soil sampling effort. As this figure shows, most of the areas containing PCBs in excess of the cleanup goals (10 mg/kg within the fenced area and 1 mg/kg outside the fenced area) also contain lead in excess of the cleanup goals (1,000 mg/kg within the fenced area and 400 mg/kg outside the fenced area). Only two grids out of 48 show soil concentrations in excess of PCB cleanup goals. The estimated total volume of soil in excess of soil cleanup goals is 8,300 cubic yards - a volume that is less than that originally estimated in the RI/FS (about 11,600 cubic yards).

The 2002 Site characterization data suggest that the estimated volume of soil containing PCB concentrations greater than 50 mg/kg is less than 100 cubic yards (or around 1 percent of the total soil remediation volume). This volume is significantly less than the 5,200 cubic yards (or around 40 percent of the total estimated soil remediation volume) previously estimated in the RI/FS. This finding is further supported by the 2003 soil resampling effort that included previously identified PCB “hot-spot” areas. Therefore, the more recent Site characterization data suggest that the volume of soil with PCB concentrations greater than 50 mg/kg is relatively insignificant, making solvent extraction of soil with PCBs greater than 50 mg/kg much more costly per cubic yard to treat, and thus a less cost effective remedy than originally assumed in the RI/FS and ROD.

In summary, the post-ROD soil data indicate smaller than expected soil remediation volumes, commingled lead and PCB contamination above cleanup goals, and generally much lower PCB concentrations and relatively minor “hot-spot” volumes than the pre-ROD Site data. This data forms the basis for changing the ROD to provide for off-Site disposal of the expected small volume of soil containing PCB concentrations greater than 50 mg/kg.

Cover System Evaluation

In the 1995 ROD, the cover system was to be designed to minimize future use of the cap area. As a result, the ROD cover system would be elevated 12 feet above ground surface with steep slopes to minimize the surface footprint and discourage any future use of this area of the Site. Since the ROD, however, EPA has adopted a more sustainable approach for Superfund sites that encourages their reuse once remediated. As a result of this policy change, the design slopes of the cover system were reevaluated. It was determined that the steep slopes discussed in the ROD to minimize the size of the surface footprint and discourage future land use would also create higher maintenance costs to mitigate surface erosion. Therefore, more gentle slopes that minimize erosion of the upper vegetative soil layer of the cap and encourage compatible future limited surface uses (e.g., parking lot) were determined to be more suitable under the current EPA policy regarding Superfund sites. Reuse of the containment area will be controlled by the ICs placed on the access to the Site, O&M of the cap, and restrictions on digging and construction atop the cap.

In order to select the optimal cap design, the performance and cost of the 1995 ROD cap were compared to an alternative cap design. The 1995 ROD cap consists of two (2) feet of low permeability silt layer underneath an 18-inch thick armoring and erosion control layer of pit run gravel. The alternate cap consists of a low-permeability GCL underneath 18 inches of granular sandy soils and six inches of compacted road base on top to facilitate future surface uses of the cap. Figure 3 shows a conceptual cross-section of both the 1995 ROD and the alternative cap designs. The following criteria were used for the comparison:

- long-term performance relative to freeze-thaw cycles;
- predicted infiltration into the stabilized wastes; and
- capital cost for construction.

Long-term Performance Relative to Freeze-Thaw Cycles

The frost depth in Fairbanks, Alaska is reported to be 8 feet. The frost resistance of the compacted silt liner would be subjected to freeze-thaw cycles and, based on field and laboratory testing, the permeabilities of these liners could change due to the freeze-thaw effect. Based on the specified placement permeability of the silt layer of 1 x 10-7 cm/sec (1995 ROD), in as little as two freeze-thaw cycles, the permeability of this silt layer could increase to 1 x 10-5 cm/sec. On the other hand, GCLs have proven to lose only approximately one-half to one order of magnitude in permeability not two (2) orders of magnitude as the compacted silt. Assuming typical GCL placement permeability of 5 x 10-9 cm/sec, after a number of freeze-thaw cycles, the permeability would increases to 1 x 10-8 to 5 x 10-8 cm/sec. The GCL appears to be less permeable than the silt. As Robert Koerner reports in Designing with Geosynthetics, 4th Edition, “While the moisture in the bentonite of the GCL can freeze, causing a disruption of the soil structure, upon thawing the bentonite is very self healing and apparently returns to its original state.” As long as the infiltration rates remain low, this cover layer is expected to provide long-term protection against infiltration into the consolidated, solidified/stabilized, contaminated soil.

Predicted Infiltration Through the Cap into the Stabilized Soil

The primary measure of effectiveness of the cap is the amount of water infiltrating into the solidified/stabilized soil. The two cover systems have been evaluated using the U.S. EPA “Hydrologic Evaluation of Landfill Performance (HELP) Model.” The HELP model uses weather, soil, and design data to conduct water balance analyses and estimate a cover system’s performance for up to 100 years. The HELP model is a tool to assess the relative effectiveness of the caps to allow a comparative analysis between alternatives. The percolation numbers should not be considered definitive.

Each cap was modeled using the 5-year default climatic data for Fairbanks, Alaska contained in the HELP model database (1972 – 1976). Design data for the cover systems include a 2% top slope, and a surface water runoff number of 94. Table 2 shows the amount of percolation predicted for the cover identified in the ROD and the proposed alternate cover system using long-term permeability values.

TABLE 3
HELP MODEL RESULTS

Case Number	Cover System Design	Estimated Infiltration Through Cover
1	24-Inch Silt Liner	0.82 inches
2	Geosynthetic Clay Liner	0.71 inches

The estimated infiltration represents approximately 6 to 10 percent of the average annual rainfall of 9.40 inches. In general, the modeling results show that the GCL option allows approximately 13% less infiltration than the silt liner option.

Capital Cost of Cover System

The installation cost of each cover system, assuming a 1-acre stabilized waste area is presented in Table 2. These costs are presented for comparison purposes and include material purchasing, hauling to the Site, placement, construction quality control/assurance, re-vegetation of disturbed areas, equipment mobilization and equipment demobilization. In general, the cost estimates indicate that the GCL option would cost 16% less than the silt liner option. Based on the lower cost and higher short- and long-term effectiveness, the most attractive cap alternative appears to be the GCL alternative.

TABLE 4
PRELIMINARY UNIT CONSTRUCTION COST
FOR PROPOSED COVER SYSTEMS

Case Number	Cover System Design	Estimated Construction Cost Per Acre Of Coverage
1	24-Inch Silt Liner	$200,000.00
2	Geosynthetic Clay Liner	$168,000.00

Changes to ARARs

With two exceptions, the applicable or relevant and appropriate requirements (ARARs) established in the 1995 ROD are not being changed or modified by this ESD. The TSCA PCB disposal requirements and Chemical Waste Landfill requirements and related waivers established in the 1995 ROD are still part of the revised remedy, as are all other ARARs except as noted below.

1. Hazardous Waste Determination. The 40 CFR 261, RCRA Subtitle C, Hazardous Waste Determination is still applicable to identifying soil that must be managed as hazardous waste. Based on results of Site treatability studies for lead contaminated soil and the maximum total lead concentrations found in the soil remaining at the site, it is not expected that the untreated soil would fail the TCLP test for lead and thus be a characteristic hazardous waste.

Even if some of the untreated soil would be designated as a RCRA Hazardous Waste, by using the TCLP characteristic level for lead, the stabilization/solidification treatment for all contaminated soil above the cleanup levels is designed to reduce TCLP to below 0.75 mg/l, and thus it would no longer be a RCRA hazardous waste. This soil would also meet the Land Disposal Regulations (LDR) standards [as promulgated at the time of the ROD as well as current LDR standards].

The LDR treatability variance established in the ROD is no longer needed and is hereby removed from the remedy. It is not needed because: 1) no soil containing 50 ppm PCBs or more will be left on Site; 2) EPA has removed the California list provisions from the RCRA LDR regulations; and 3) EPA has temporarily deferred the Universal Treatment Standard requirement to meet the LDRs for PCBs for soil exhibiting a hazardous characteristic due to the TCLP test for metals, including lead. (40 CFR 268.48 Table, footnote 8.)

2. Arsenic MCL. The ROD establishes the federal MCLs as relevant and appropriate for establishing protective groundwater criteria. Since the ROD was signed, the MCL for arsenic has been changed from 50 ug/l to 10 ug/l. This ESD changes the arsenic groundwater protective criteria from 50 ug/l to 10 ug/l or natural background, whichever is less stringent.

The arsenic concentrations in the groundwater at the Site range from non-detect to 59.1 ug/l. Samples were taken at monitoring wells and the private residences between September 1992, and May 1997. The results are similar across the Site, generally ranging from non-detect to 20 ug/l. The highest concentrations were from the monitoring wells in the northwest corner of the Site. This location was the former on-Site, part time residence where a localized change in the concentration levels of many of the groundwater parameters has been observed. This change was explained by a potential redox change in the soil due to discharges to a septic system near the residence. There were no sources of arsenic found as hazardous materials on-Site. It is also noted that arsenic concentrations above 10 ug/l up to about 20 ug/l are found in the regional groundwater aquifer. Since there is no source of arsenic at the Site, and because the arsenic values are widespread, the source of arsenic is thought to be naturally occurring.

Arsenic is a compound that will have to be evaluated further if the groundwater at the Site is to meet federal drinking water quality goals. The change in this ARAR will require long-term monitoring for arsenic to determine if the Site has an impact on the aquifer. The remedy does not call for the specific cleanup of arsenic in groundwater at this time. If the Site proves to be a source of high concentrations of arsenic in the groundwater, then arsenic will have to be further evaluated for this Site.

The overall protection of human health and the environment is preserved with these changes in the management of PCBs and the cover design. The recent changes to the arsenic MCL require that arsenic be evaluated further and remedial actions be taken if it is determined that releases from the Site are causing an arsenic problem in the groundwater aquifer. ICs will be established more precisely with documents which allow long-term access for O&M at the Site, and maintain the industrial land use restrictions that will run with the land. The goal to protect human health and the environment remains a purpose of Superfund cleanups.

IV. AFFIRMATION OF STATUTORY DETERMINATIONS

Considering the new information on the PCB soil contamination and the cover system design since the ROD was completed, EPA believes that the revised remedy is as protective of human health and the environment, and is more cost effective. The revised remedy utilizes permanent solutions to the maximum extent practicable for this Site. It complies with the NCP and other federal and state requirements that are applicable or relevant and appropriate to this remedial action and were identified in the ROD, or modified by this ESD.

V. STATE CONCURRENCE

The Alaska Department of Environmental Conservation has reviewed this ESD found it consistent with state requirements, and concurs with this change in the management of PCBs and cover design.

VI. PUBLIC PARTICIPATION ACTIVITIES

This ESD will become a part of the Administrative Record for the Arctic Surplus Site. The availability of the ESD and a summary of its impact on the Site remedy will be announced in a fact sheet sent to the mailing list and published in a local newspaper. For additional information regarding this ESD document, please contact the Superfund Project Manager for the Arctic Surplus Site:

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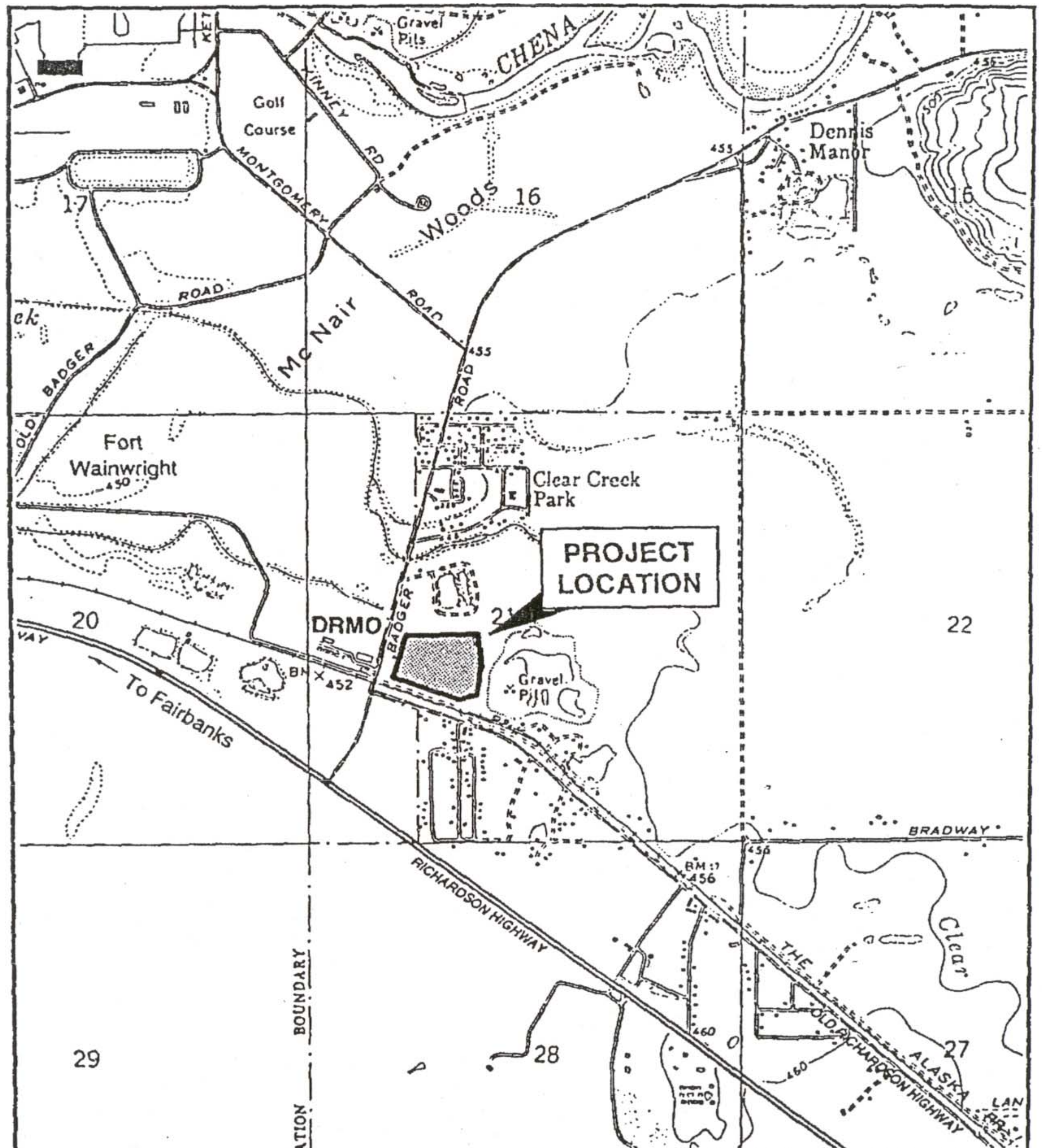
VII. APPROVAL

Explanation of Significant Differences
Arctic Surplus Salvage Yard Superfund Site
Fairbanks North Star Borough, Alaska

Approval:

for Michael F. Gearheard, Director
Environmental Cleanup Office

June 17, 2003
Date



NOTE: Map adapted from USGS topographic map of Fairbanks D-2 SE,AK quadrangle, dated 1966.

N

1/4 0 1/4 1/2 MILE

EARTH TECH

FIGURE 1

LOCATION MAP

Arctic Surplus Salvage Yard
Fairbanks, Alaska

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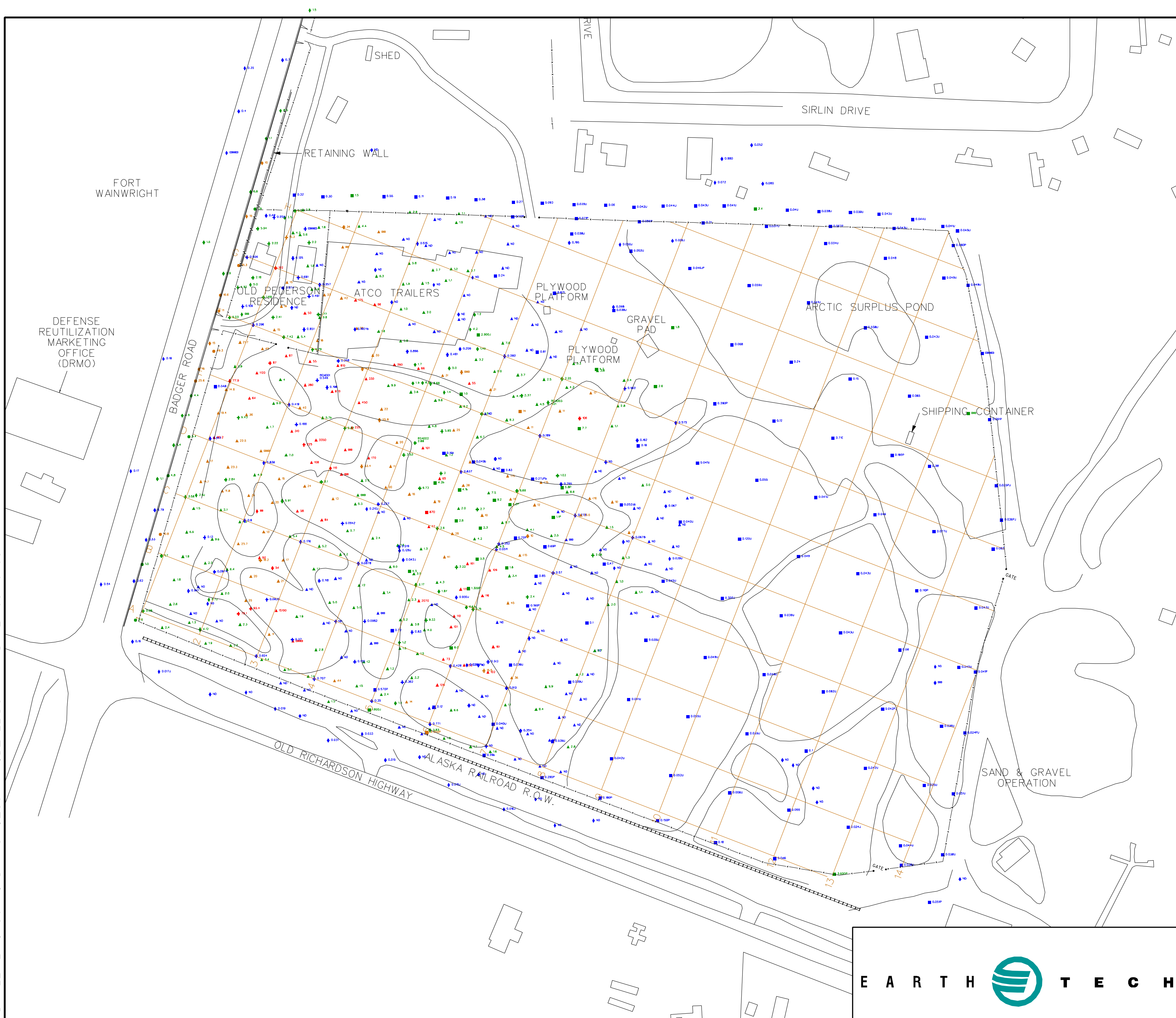

LEGEND

- 1990 SAMPLE DATA
- 1991 SAMPLE DATA
- 1992 SAMPLE DATA
- 1993 SAMPLE DATA
- 2002 SAMPLE DATA
- GREATER THAN 50 ppm
- 10-50 ppm
- 1-10 ppm
- 0-1 ppm

NOTES

1. SITE PLAN IS ADAPTED FROM DRAWING PROVIDED BY ALASKA DISTRICT, CORPS OF ENGINEERS, ANCHORAGE, ALASKA
2. PRE-2002 SAMPLE DATA WERE TAKEN FROM ARTIC SURPLUSSALVAGE YARD REMEDIAL INVESTIGATION REPORT, MAY 1994, SHANNON AND WILSON
3. 2002 SAMPLE DATA COLLECTED DURING SEPTEMBER AND OCTOBER 2002 SAMPLING EVENTS.

N

80 0 80 160 FEET

EARTH TECH

FIGURE 3

PCB CONCENTRATIONS IN SURFACE SOIL

Arctic Surplus Salvage Yard
Fairbanks, Alaska

CAD FILE: L:\GROUP\CAD\ARCTIC_SURP\PCB_ALL.DGN DATE: 05/19/03